

MULTI-APERTURE OPTICAL DIMMING SYSTEM

ABSTRACT OF THE DISCLOSURE

A dimming system is provided that facilitates a wide dimming range and precise control of the dimming range. In one embodiment, the dimming system comprises a multi-aperture dimming system. The multi-aperture dimming system can be implemented in any display that utilizes a fly's eye lens array. The multi-aperture dimming system comprises a plurality of moveable attenuators. The moveable attenuators are configured to form a plurality of apertures that can be controllably opened and closed. Each of the plurality of apertures attenuates a portion of the light propagating through at least one of the lenses in the fly's eye lens array. Thus, by selectively controlling the plurality of moveable attenuators, the dimming system can control the throughput of light propagating through the fly's eye lens array, where the throughput is the percentage of light passed compared to the light passed at maximum brightness and thus is the reciprocal of the dimming ratio at a given setting.